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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,405	04/19/2004	Deirdre M. Hall	ACS-0004	4516

23413 7590 07/09/2007

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EXAMINER	
PERVAN, MICHAEL	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
07/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/828,405	HALL ET AL.	
	Examiner	Art Unit	
	Michael Pervan	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/19/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In regards to claims 1, 7, 18 and 23, "a system for fusing multiple degree of freedom (DOF) positional input data" is not supported by the specification. Even though on page 5, line 27-page 6, line 7 and page 6, line 31-page 7, line 4, refers to fusing the position data, the specification does not disclose how the fusing of the positional data is done.

3. Claim 24 is rejected under 35 U.S.C. § 112, first paragraph, as being of undue breadth.

A "single means" claim, i.e. where a means recitation does not appear in combination with another recited element or means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. See In re Hyatt, 218 USPQ 195, (CAFC 1983) and MPEP 2164.08(a).

2164.08(a) Single Means Claim

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 218 USPQ 195 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor. Although the court in Fiers v. Sugano, 984 F.2d 164, 25 USPQ2d 1601 (Fed. Cir. 1993) did not decide the enablement issue, it did suggest that a claim directed to all DNAs that code for a specified polypeptide is analogous to a single means claim.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In regards to claim 1, it recites among other features "software configured to scale positional output data". It does not, however provide a useful or tangible result and merely modifies positional output data.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5, 7-10 and 14-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Retter (US 4,917,516).

In regards to claim 1, Retter discloses a system for fusing multiple degree of freedom (DOF) positional input data, comprising:

software configured to scale positional output data from a first positional input device and a second positional input device, using a common axis therebetween (col. 10, line 60-col. 11, line 2);

said positional output data from said first positional input device having at least two degrees of freedom associated therewith (col. 10, line 60-col. 11, line 2); and

said positional output data from said second positional input device having at least two degrees of freedom associated therewith (col. 10, line 60-col. 11, line 2; the input device will have two degrees of freedom the z direction and either x or y).

In regards to claim 2, Retter discloses the system of claim 1, wherein:

said common axis defines a first dimension of scaled positional output data from said software (col. 10, line 60-col. 11, line 2);

a non-common axis of said positional output data from said first positional input device defines a second dimension of said scaled positional output data (col. 10, line 60-col. 11, line 2); and

a non-common axis of said positional output data from said second positional input device defines a third dimension of said scaled positional output data (col. 10, line 60-col. 11, line 2).

In regards to claim 3, Retter discloses the system of claim 2, wherein:

said non-common axis of said first positional input device is orthogonal to said non-common axis of said second positional input device (col. 10, line 60-col. 11, line 2;

it is inherent that the non-common axes be orthogonal since the input devices control three-dimensional data); and

said non-common axis of said first positional input device and said non-common axis of said second positional input device are orthogonal to said common axis (col. 10, line 60-col. 11, line 2; it is inherent that the non-common axes be orthogonal to the common axes since the input devices control three-dimensional data).

In regards to claim 4, Retter discloses the system of claim 3, further comprising a three-dimensional display configured to display said scaled positional output data from said software (col. 10, line 60-col. 11, line 2; since the input devices control three-dimensional data for graphics CAD and other applications, the display must be in three-dimensions as well).

In regards to claim 5, the system of claim 1, Retter discloses wherein said software is embedded in a host environment (It is inherent that the software be embedded (installed) in the host environment (computer 10)).

In regards to claim 7, Retter discloses a system for fusing and displaying multiple degree of freedom (DOF) positional input data, comprising:

a first positional input device (col. 10, line 60-col. 11, line 2);

a second positional input device configured to track the position of said first positional input device (col. 10, line 60-col. 11, line 2);

software in communication with said first and said second positional input device, said software configured to scale positional output data from said first and said second

positional input devices using a common axis therebetween (col. 10, line 60-col. 11, line 2); and

a three-dimensional display configured to display scaled positional output data from said software (col. 10, line 60-col. 11, line 2; since the input devices control three-dimensional data for graphics CAD and other applications, the display must be in three-dimensions as well).

In regards to claim 8, Retter discloses the system of claim 7, wherein:

said first positional input device has at least two degrees of freedom associated therewith (col. 10, line 60-col. 11, line 2); and

said second positional input device has at least two degrees of freedom associated therewith (col. 10, line 60-col. 11, line 2).

In regards to claim 9, Retter discloses the system of claim 8, wherein:

said common axis defines a first dimension of said scaled positional output data (col. 10, line 60-col. 11, line 2);

a non-common axis of said first positional input device defines a second dimension of said scaled positional output data (col. 10, line 60-col. 11, line 2); and

a non-common axis of said second positional input device defines a third dimension of said scaled positional output data (col. 10, line 60-col. 11, line 2).

In regards to claim 10, Retter discloses the system of claim 9, wherein:

said non-common axis of said first positional input device is orthogonal to said non-common axis of said second positional input device (col. 10, line 60-col. 11, line 2;

it is inherent that the non-common axes be orthogonal since the input devices control three-dimensional data); and

said non-common axis of said first positional input device and said non-common axis of said second positional input device are orthogonal to said common axis (col. 10, line 60-col. 11, line 2; it is inherent that the non-common axes be orthogonal to the common axes since the input devices control three-dimensional data).

In regards to claim 16, Retter discloses the system of claim 7, wherein said software is embedded in a host environment (It is inherent that the software be embedded (installed) in the host environment (computer 10)).

In regards to claims 18 and 23, Retter discloses a method for fusing and displaying multiple degree of freedom (DOF) positional input data from multiple input sources, the method comprising:

receiving positional input data from a first positional input device (col. 10, lines 64-67);

receiving positional input data from a second positional input device (col. 10, line 67-col. 11, line 2);

scaling said positional input data from said first and said second positional input devices using a common axis therebetween (col. 10, line 60-col. 11, line 2); and

displaying scaled positional output data on a three-dimensional display device (col. 10, line 60-col. 11, line 2; since the input devices control three-dimensional data for graphics CAD and other applications, the display must be in three-dimensions as well).

In regards to claim 19, Retter discloses the method of claim 18, wherein said second positional input device is configured to track the position of said first positional input device (col. 10, line 60-col. 11, line 2; since the two input devices have a common axis between them, they must track each other so that the three dimensional input is correct).

8. Claims 24-26, 28-34 and 36-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Ebina et al (US 4,812,829; as submitted by applicant).

In regards to claims 24 and 32, Ebina discloses a system for displaying multiple degree of freedom (DOF) positional input data, comprising:

a multiple DOF input source for generating the positional input data (Fig. 1 and col. 2, lines 39-45; multiple DOF input source (three dimensional input device 105) generates positional input data to move a vector cursor);

a three-dimensional display device (display screen 100) configured to depict a three dimensional pointing icon on said three dimensional display device (Fig. 1 and col. 2, lines 19-27);

said three dimensional display device having a first three dimensional coordinate system associated therewith (Fig. 1 and col. 2, lines 19-22); and

wherein the positional input data from said multiple DOF input source has a second three dimensional coordinate system associated therewith (Fig. 1 and col. 2, lines 41-45; since the input source (three dimensional input device 105) is separate from the display device it will have a second three dimensional coordinate system associated therewith).

In regards to claims 25 and 33, Ebina discloses the system of claim 32, wherein said first three-dimensional coordinate system is configured to be arbitrarily mapped with respect to said second three-dimensional coordinate system (Fig. 1 and col. 2, lines 41-45; since the movement of the input source causes movement moves a pointing icon on the display device the three dimensional coordinate system of the display device is mapped with respect to the three dimensional input of the input source).

In regards to claims 26 and 34, Ebina discloses the system of claim 32, wherein said three-dimensional pointing icon further comprises at least one of: a crosshair configuration, an arrow configuration, and a spherical configuration (Fig. 1; pointing icon (vector cursor 102) is in an arrow configuration).

In regards to claims 28 and 36, Ebina discloses the system of claim 32, wherein said three dimensional pointing icon is mapped to at least one reference grid, said at least one reference grid displayed on said three dimensional display device (Fig. 1 and col. 2, lines 24-27).

In regards to claims 29 and 37, Ebina discloses the system of claim 32, wherein at least one reference structure is tracked with said three dimensional pointing icon, said at least one reference structure displayed on said three dimensional display device (Fig. 1 and col. 2, lines 19-22).

In regards to claims 30 and 38, Ebina discloses the system of claim 37, wherein said at least one reference structure comprises a reference plane (Fig. 1 and col. 2, lines 22-24).

In regards to claims 31 and 39, Ebina discloses the system of claim 37, wherein said at least one reference structure comprises a reference angle bracket (Fig. 1; as can be seen from the drawing the pointing icon and reference grid give an angle in relation to the reference structure).

In regards to claim 40, Ebina discloses the system of claim 32, wherein said multiple DOF input further comprises:

a joystick configured to provide positional input data along a first axis and a second axis (Fig. 1 and col. 2, lines 45-47); and

a lever configured to provide positional input data along a third axis (Fig. 1 and col. 2, lines 47-49).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Retter.

In regards to claim 6, Retter does not disclose the system of claim 1, wherein said software is embedded within at least one of said first positional input device and said second positional input device.

However, Retter discloses having said software embedded in a host environment (It is inherent that the software be embedded (installed) in the host environment (computer 10)).

Since there is no benefit or advantage given in the specification for having the software embedded in an input device rather than the host environment, it would be obvious to one of ordinary skill in the art to have the software embedded in either an input device or the host environment based on a designer's choice.

In regards to claim 17, Retter does not disclose the system of claim 7, wherein said software is embedded within at least one of said first positional input device and said second positional input device.

However, Retter discloses having said software embedded in a host environment (It is inherent that the software be embedded (installed) in the host environment (computer 10)).

Since there is no benefit or advantage given in the specification for having the software embedded in an input device rather than the host environment, it would be obvious to one of ordinary skill in the art to have the software embedded in either an input device or the host environment based on a designer's choice.

11. Claims 14-15 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Retter in view of Norton et al (US 5,704,836).

In regards to claims 14 and 20, Retter does not disclose the system of claim 7, wherein said software is configured to prevent scaling of said positional output data

from said first and said second positional input devices whenever a minimum threshold of movement along said common axis is not detected.

Norton discloses wherein said software is configured to prevent scaling of said positional output data from said first and said second positional input devices whenever a minimum threshold of movement along said common axis is not detected (col. 21, lines 42-48).

It would have been obvious at the time of invention to modify Retter with the teachings of Norton, minimum threshold for scaling input, because it prevents unwanted movements from being detected and inputted.

In regards to claims 15 and 21, Retter does not disclose the system of claim 7, wherein said software is configured to prevent scaling of said positional output data from said first and said second positional input devices whenever a maximum threshold of movement along said common axis is detected.

Norton discloses wherein said software is configured to prevent scaling of said positional output data from said first and said second positional input devices whenever a maximum threshold of movement along said common axis is detected (col. 21, lines 36-39).

It would have been obvious at the time of invention to modify Retter with the teachings of Norton, minimum threshold for scaling input, because it prevents unwanted movements from being detected and inputted.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Retter in view of Norton et al in further view of Sanamrad (US 6,813,630).

In regards to claim 22, Retter and Norton do not disclose the method of claim 21, further comprising preventing scaling of said positional output data from said first and said second positional input devices whenever said receiving positional input data from a first positional input device is interrupted.

Sanamrad discloses preventing scaling of said positional output data from said first and said second positional input devices whenever said receiving positional input data from a first positional input device is interrupted (col. 6, lines 36-39).

It would have been obvious at the time of invention to modify Retter and Norton with the teachings of Sanamrad, resending data if it is interrupted, because it assures the user that the data was received correctly.

13. Claims 27 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebina et al.

In regards to claims 27 and 35, Ebina does not disclose the system of claim 34, wherein said three-dimensional pointing icon is an adjustably sized spherical configuration.

However, Ebina discloses the three-dimensional pointing icon having an arrow configuration (Fig. 1 and col. 2, lines 24-27).

Since, there is no advantage or benefit given in the specification for choosing an adjustably sized spherical configuration instead of an arrow configuration, it would have been obvious to one of ordinary skill in the art at the time of invention to choose a three-dimensional pointing icon having either an adjustably sized spherical configuration or an arrow configuration based on a designer's choice.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Pervan whose telephone number is (571) 272-0910. The examiner can normally be reached on Monday - Friday between 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVP
June 21, 2007

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June 21, 2007

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SUPERVISORY PATENT EXAMINER